House of Commons

Science and Technology Committee

Educating tomorrow's engineers: the impact of Government reforms on 14–19 education: Government Response to the Committee's Seventh Report of Session 2012–13

First Special Report of Session 2013–14

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Science and Technology Committee

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The Reports of the Committee, the formal minutes relating to that report, oral evidence taken and some or all written evidence are available in printed volume(s). Additional written evidence may be published on the internet only.

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First Special Report

On 8 February 2013 the Science and Technology Committee published its Seventh Report of Session 2012–13, *Educating tomorrow's engineers: the impact of Government reforms on 14–19 education* [HC 665]. On 5 April 2013 the Committee received a memorandum from the Government which contained a response to the Report. The memorandum is published as Appendix 1 to the Report.

Appendix 1: Government response

1. The Science and Technology Select Committee published the report from its inquiry into engineering education and skills on 30 January 2013. This focused on the role of government education reforms in addressing the shortfall in the number of engineers required by employers to support economic growth.

2. This document sets out the Government's response to the 24 conclusions and recommendations made in the Committee's report. The Committee's conclusions and recommendations are set out below in bold text and the Government's responses in plain text.

3. The Government thanks the Committee for its comprehensive report on the impact of Government reforms on the 14–19 agenda on engineering. We believe that the future economic success of the UK is dependent upon a good supply of skilled scientists and engineers. Engineers contribute widely to the economy and their understanding of technology and the opportunities it brings is helping to drive up competitiveness across the economy.

Conclusions and recommendations of the Committee

The engineering skills gap

(1) Despite the Government's recognition of the importance of engineering skills, particularly to the growth agenda, there is a persistent gap in the numbers of engineers required to achieve active economic growth, which is likely to worsen unless radical action is taken.

4. We agree with the Committee that changes are needed to address the persistent skills gap in engineering. As the report recognises, mathematics and science study is key to the promotion of engineering skills. We are allocating up to £135 million over the current spending review period to support science and mathematics education. This includes funding to support regional science centres, programmes to increase the number of pupils taking GCSE triple science, A Level Physics and Further Mathematics, and funding to increase the number of specialist science and mathematics teachers.

5. The Government is committed to increasing the number of young people studying STEM subjects. The number of pupils taking GCSE triple science continues to grow, from 46,408 in 2006 to 152,685 in 2012, and the number of schools offering triple science has risen from 50% in 2009 to 84% in 2012. Greater numbers of young people are studying A-level mathematics—64,519 in 2009 rising to 78,078 in 2012 and A-level physics entries have risen from 25,620 in 2009 to 30,750 in 2012.

6. We are funding the Triple Science Support Programme which is aimed specifically at improving the quality of teaching and increasing the number of students taking these subjects. In addition, our reforms to GCSEs will ensure our examinations equip young people better and are recognised as on a par with those in the highest performing jurisdictions in the world.

7. We are funding programmes to encourage more students to study A-level Physics and A-level Further Mathematics which are a key foundation for success in engineering-related subjects at university. This includes expansion of the work of the Stimulating Physics Network and the Further Mathematics Support Programme (delivered by the Institute of Physics and Mathematics in Education and Industry respectively) so that schools widen participation in these subjects, especially among under-represented groups such as girls and those living in disadvantaged areas.

8. The Government believes that vocational education should be valued as highly as academic education. Our reforms to vocational education will contribute towards economic growth, improve social mobility and inspire ambition in young people. It is vital that vocational education is not considered a second rate route, where less able young people are directed before they take up low skilled, low value jobs. It needs to be an equally valued alternative to academic education. We want to work closely with the engineering sector to shape future education policy and implement policies that provide a greater incentive to young people to follow careers in engineering.

Engineering education

(2) As good engineers need theoretical knowledge and practical skills to enter the profession at any level, engineering education and training must provide both.

9. We agree with the committee's conclusion, and raising the quality and credibility of the engineering qualifications offered by schools and colleges is a key priority for the Government. Strict conditions determine the type of content Key Stage 4 qualifications have to contain if they are to be approved for inclusion in performance tables. Qualifications have to support the acquisition of a significant knowledge core, and the development of a broad and comprehensive understanding. 11 engineering qualifications will count in the 2014 tables, and therefore satisfy this requirement.

10. It is not for the Government to stipulate the precise content of qualifications, or indeed which qualifications schools should offer. Nevertheless, the reformed performance tables will strongly incentivise the uptake of qualifications that blend theoretical knowledge and practical skills in an appropriate way.

11. We are now consulting on similar reforms to vocational education at 16-19. The aim is to raise the quality of Level 3 vocational qualifications and incentivise the uptake of

occupational courses. A new requirement that vocational qualifications are endorsed by employers and involve professional and trade bodies in their delivery and assessment should focus schools, colleges and training providers on local labour market needs. This will encourage the development of occupational skills in sectors where there are shortages, including engineering.

12. High quality occupational qualifications will be allied to a solid grounding in mathematics, helping to ensure that engineering pathways at 16–19 are rigorous and challenging. In addition, 16–19 Study Programmes will require all students who have not already achieved A*—C GCSE in maths to continue to study mathematics post 16. The Secretary of State for Education has also set a goal that within ten years the vast majority of pupils study maths up to the age of 18. The Department is currently working to ensure that appropriate qualifications are available to those students who have achieved a grade C or better at GCSE but would not otherwise continue to study mathematics.

GCSEs and the English Baccalaureate

(3) We welcome the EBac's focus on attainment of maths and science GCSEs, which are important precursors for further study and careers leading to engineering. However, we are concerned that important subjects such as Design and Technology (D&T) are being adversely affected as schools focus on the EBac. Although the EBac leaves curriculum time to study other subjects, schools are likely to focus on the subjects by which their performance is measured and less on non-EBac subjects.

(4) We recommend that Design and Technology should remain in the National Curriculum at Key Stage 4.

13. Our proposed reforms to Key Stage 4 accountability, which are outlined in response to (5) below, will ensure that schools' performance is measured against a range of subjects, including those not in the EBacc.

14. As noted in paragraph 29 of the Committee's report, Design and Technology is currently a compulsory National Curriculum subject at Key Stages 1–3. We have decided to retain Design and Technology at these key stages. It will be a compulsory National Curriculum subject to the age of 14 and at Key Stage 4 all pupils will have a statutory entitlement to study it if they choose.

(5) *The consultation on Reforming Key Stage 4 Qualifications closed before this Report was published but we expect the Government to take into account our views when deciding the future of Key Stage 4 Qualifications. In addition, the Government must consider how to reward schools and recognise performance in non-EBac subjects when it reviews on the school accountability system.*

15. The consultation response was published in February. The Secretary of State has now announced that GCSEs will be comprehensively reformed in order to ensure that young people have access to qualifications that are highly respected, and which set expectations that match or exceed those in high performing jurisdictions. Reformed GCSEs in English, mathematics, the sciences, history and geography will be available for first teaching from September 2015. Other subjects will follow as soon as possible after that, with the aim that they should be available for first teaching from September 2016.

16. We have launched a consultation on Key Stage 4 accountability. The Government has considered how to recognise the performance of schools in subjects outside the EBacc when reviewing the school accountability framework. We have proposed two new measures to replace the current headline measure of the percentage of pupils gaining 5 A*–C grades including English and mathematics. The measures are: a threshold attainment measure, showing the percentage of pupils in each school achieving a 'pass' in English and mathematics, and a progress measure based on pupils' average scores across a suite of 8 qualifications. The 8 qualifications counted in the measure will be English, mathematics, 3 further EBacc subjects, and 3 other high value qualifications which could be from the EBacc or other academic, creative or vocational qualifications. The new progress measure will incentivises schools to offer a broad and balanced curriculum, including up to three subjects from beyond the EBacc where appropriate.

Vocational Education

(6) The change in GCSE equivalence of the Engineering Diploma following vocational education reforms potentially sends a poor message from Government about the value of engineering education, which is at odds with the Government's frequently stated emphasis on the importance of engineering to the UK, and may lead to the Diploma being a less attractive qualification to schools. The change was, in our view, made in haste and we feel the Government should have fully developed its plans for a redesigned set of engineering qualifications before announcing what was perceived as a downgrading of the Engineering Diploma. We are pleased the Government is now engaging with the engineering community to address this.

17. The Government does not agree that the change in GCSE equivalence of the Engineering Diploma sends a poor message about the value of engineering education. We believe that our vocational education reforms will improve the status and value of vocational qualifications. The performance table reforms were made following a full, public consultation and were not made in haste. Furthermore, we have considered the views of the engineering sector carefully.

18. These reforms give far greater recognition to qualifications that enable pupils to progress post-16, and end a system that has treated excellent qualifications as indistinct from lower value ones. Only 4 per cent of non-GCSE/iGCSE qualifications will continue to count in performance tables in 2014, and Principal Learning in Engineering (at both Level 1 and 2) is one of these. A further nine engineering qualifications have been approved for inclusion in the 2014 tables, reflecting their status as high value vocational qualifications that meet rigorous standards.

19. Engineering qualifications will continue to be recognised in the 2015 performance tables. Level 2 Principal Learning in Engineering has been approved for inclusion in the 2015 Key Stage 4 performance tables, along with a further 11 vocational qualifications in engineering at Levels 1 and 2. Principal Learning in Engineering will continue to be available for teaching until it is withdrawn by the three awarding organisations that offer it.

20. It would go against the principles of the Wolf Report for the Government to design (or re-design) qualifications. Previous attempts to design qualifications to deliver policy aims (such as the previous Government's Diploma) have not been successful. We have

welcomed the approach taken by the engineering community, led by the Royal Academy of Engineering, to develop a suite of four new qualifications to replace Principal Learning. We are providing our full endorsement and support to this work.

(7) ***We recommend that where the Engineering Diploma or its successor is taught, it should be included in performance measures for schools alongside the EBac.***

21. The Department is currently consulting on reforms to the accountability measures for secondary schools. As we have said above, we have proposed a new measure to report progress across eight qualifications, which can include up to three high-value vocational qualifications. The new engineering qualifications, if they meet the required standard, would be included within performance measures. Principal Learning in Engineering, the core qualification of the Engineering Diploma, has already been approved for inclusion in the 2014 and 2015 Key Stage 4 performance tables, where it will count as equivalent to one GCSE.

22. The Department for Education assesses new qualifications for inclusion in performance tables on an annual basis. Any qualifications that have been accredited by Ofqual by September 2013 may be submitted for consideration for the 2016 Key Stage 4 performance tables. The Department has established a rigorous process to decide which qualifications meet the standards required for inclusion, and it is not possible to predict the outcome in advance.

(8) We look forward to the Government's proposals for a Technical Baccalaureate with interest. ***If the TechBac is to be a success, we consider that the following conditions must be met: (i) its structure should reflect our observations in paragraph 24 of this Report; (ii) while offering a more creative and technical curriculum, the TechBac should offer a broad base of education to facilitate a wide range of further study and career options; (iii) the Government must endeavour to ensure that the TechBac does not suffer from the cultural misperception that plagues vocational education, namely that it is for less bright students; and (iv) schools must be incentivised to focus on the TechBac. To achieve this, the TechBac should be equivalent to the EBac in all respects.***

23. We are currently developing detailed proposals for the introduction of a Technical Baccalaureate Standard (rather than a new qualification) which recognises the achievements of 16–19 year olds who have achieved the highest levels of technical training. Meeting the standard will enable some students to move directly into a technical occupation, or progress to further learning such as a higher apprenticeship or technical degree. The Technical Baccalaureate and Apprenticeships will provide the most able and committed students with two prestigious occupational programmes endorsed by employers, the former class-based and the latter work-based.

24. We shall continue to consult employers and sector representatives during the development of the Standard, to ensure it is valued and recognised by industry and higher education.

Work Experience

(9) Good work experience is an important part of engineering education. It puts classroom learning into context, provides inspiration and is a source of career

information. In addition, work experience can provide students with valuable practical skills.

25. We agree with the Committee's conclusion. We recognise the practical value that work experience can bring to young people and it is important that it plays an integral role in vocational education, including engineering education.

26. Following Alison Wolf's recommendation that work experience should be a central feature in most young people's post-16 education, we moved to introduce far-reaching funding and curriculum changes. From this September the introduction of 16–19 Study Programmes and the associated change from funding per qualification to funding per student, will give post-16 providers much more flexibility to tailor programmes to meet the career aspiration and prior attainment of all their students. This includes greater flexibility for providers to make work experience the core of a pupil's Study Programme post-16.

(10) Recognising the challenge of providing quality work experience at Key Stage 4, the Government decided to remove the statutory duty on schools to provide work experience altogether and place greater emphasis on work experience in post-16 study. However with regard to engineering we recommend: (i) STEM work experience should take place before 16 years, before students make choices about study or work post-16; and (ii) that despite the curriculum and league table pressures a degree of compulsion should exist. There are already anecdotes suggesting that many schools are cutting back on provision of work experience and we are concerned about the impact of this on the provision of future engineers.

(11) ***The evidence we have received suggests that work experience is important for engineering education. We endorse the recommendation of the Education Committee that the Government's statutory guidance to schools should require them to provide work-related learning.***

27. We do not believe that the Committee's recommendation would be in the best interests of young people. We believe that the type and nature of work-related learning offered at Key Stage 4 should be decided at a local level according to the needs of individual schools and local employers. Employer surveys undertaken by the UKCES and the Federation of Small Businesses suggest that employers wanted a more flexible approach to providing work experience and found trying to accommodate students in the same two weeks every year unnecessary challenging.

28. The proposed reform of 16–19 qualifications is designed to increase the take up of occupationally-based qualifications, delivered with far greater employer involvement. This should increase the number of students undertaking work experience as a requirement of their qualification.

29. From September 2013, 16–19 Study Programmes will be introduced. Young people who are not taking substantial qualifications will be expected to spend the majority of their time undertaking work experience and improving their English and mathematics to achieve GCSE grades A*C if they have not already done so. Those who do take substantial qualifications will be encouraged to undertake work experience or other kinds of work-related learning where appropriate. Work experience at age 16 may underpin the students' qualification activity and provide an essential insight into and experience of the working

environment when they are reaching maturity. They will be better placed for employment or higher education as a result.

30. We support the work that the Department for Business, Innovation and Skills is doing to encourage schools to be far more proactive in making links with local businesses. There are many excellent initiatives led by the Education and Employers Taskforce and Business in the Community that can facilitate these links.

(12) We are concerned that the DfE has accepted the Wolf review's recommendation without appearing to attempt any assessment of its own on the impact of removing compulsory work experience at Key Stage 4.

31. Professor Alison Wolf found that the Key Stage 4 arrangements for work experience were often poorly timed, were not relevant to a young person's prior attainment, programme of study or future career aspiration and did not help to develop the skills employers seek. Employer surveys have also found that in the past the rigid nature and timing of Key Stage 4 work experience has often been difficult for employers and a more flexible approach to engaging employers often works better.

32. Many schools are continuing to provide good quality work experience at 14–16 and this is to be encouraged. However, the expansion of work experience at age 16 will in many cases provide a more focused opportunity for students to get a taste of the world of work in placements suited to their career aspirations and prior attainment.

University Technical Colleges

(13) University Technical Colleges (UTCs) are a welcome development and the limited evidence that is available suggests that they are effective providers of engineering education. ***However, the network of UTCs will not provide nationwide coverage and the Government must also focus on good engineering education in schools and colleges.***

33. We are on target to deliver our commitment to have at least 24 UTCs open by September 2014; as of March 2013 there are five open with a further 26 in the pipeline. As the report points out, in comparison to the total number of schools and colleges, the number of UTCs is relatively small and does not provide nationwide coverage.

34. We want every pupil, not just those at UTCs, to be able to access to high quality engineering education. Our response to recommendation 2 on engineering education also covers all schools and colleges. A key priority of this reform is to deliver improved education in all vocational areas including engineering. The reforms to vocational education will build the quality of vocational education in all schools and colleges.

(14) ***The Government and all partners involved in the establishment and operation of UTCs should focus on quality not quantity. This includes being flexible if a new UTC needs more time or resource to establish itself, for example. The quality of education offered must not be sacrificed for the sake of political deadlines.***

35. We agree with the Committee's recommendation and are ensuring that the focus in establishing UTCs is on quality. It is vital that all new schools, including University Technical Colleges, offer an excellent education to the young people who attend them. The

Government also recognises that UTCs require sound planning, expert input and strong leadership through employer and university partnerships to make each UTC a reality. A rigorous application process assesses the quality of each proposal and its rationale for establishing a UTC. Local proposer groups decide on the most suitable timetable to open each UTC, taking account of the curriculum development and the building works required to deliver the educational vision. The Department works closely with them in the pre-opening phase to secure quality.

(15) ***The Government must clarify its UTC targets and how it will measure success. First, it must clarify the rationale behind the target number. Second, it should be clear about what it expects UTCs to achieve and how performance will be monitored. Third, the lessons learned from opening the first five UTCs must be shared with those involved in establishing new UTCs, including engineering employers.***

36. We are happy to comply with the Committee's recommendation. The Coalition Agreement outlined a commitment to develop vocational and technical education that engages young people and meets the needs of modern business. Budget 2011 extended this to a commitment to at least 24 UTCs before the end of the Parliament. This increase demonstrates the Government's ambition to achieve a greater national coverage of UTCs and provide more young people with access to the specialist education they provide.

37. The Government expects leavers from UTCs at the end of year 11 and year 13 to have a wide variety of opportunities available to them. This will range from further and higher education to apprenticeships to employment. UTCs will be subject to the Ofsted inspection framework and their results will be published in Departmental performance tables. In that way the performance of UTCs will be monitored in the same way as for all other schools. This should help to ensure that more 18 and 19 year olds leaving education will be better educated and equipped to meet the needs of industry and take up the opportunities available in engineering and technical sectors that are vital to economic growth.

38. The Government recognises that UTC projects have much to learn from one another, and from those that have already opened. The DfE support in the pre-opening period builds on and shares that experience and expertise. Similarly the Baker Dearing Trust runs a programme of conferences and seminars, to which Departmental officials contribute, spreading good practice.

Careers Advice

(16) The new duty on schools to provide access to independent and impartial advice is laudable and in principle we would support greater autonomy for schools to provide careers advice. However the duty poses problems in practice. First, there are resource implications for schools that have been given more responsibility, but no additional budget, to secure careers guidance. Second, there is little guidance on the quality of careers guidance that should be available to students. ***The Government must monitor the impact of the new statutory duty and if, by September 2013, there is evidence that the duty is having a detrimental effect on schools or students, the duty should be reviewed or additional support provided to schools.***

39. We believe that the new duty on schools to provide careers advice is the best way to secure high quality careers guidance for pupils. The most important determinant of success post-16 is attainment pre-16. That is why the Government has prioritised investment in improving standards of teaching, reforming the curriculum and introducing the pupil premium, to help address the gap in attainment between children from more affluent and disadvantaged backgrounds. We have faced tough financial choices and elected to protect funding to schools and place a duty on them to secure independent and impartial careers guidance for their pupils. This gives schools complete control over their budgets so they can decide what provision is right for their pupils and target resources where they can have the greatest impact.

40. We have supported schools to take on their new responsibilities by publishing statutory guidance setting out what schools must adhere to in terms of the type and quality of careers guidance that should be secured under the new duty. We also published a practical guide, welcomed by the Association of School and College Leaders, which contains examples of excellent policy and practice so that schools can learn from each other.

41. The new duty has only been in place since September 2012 and we believe it is sensible to give the new arrangements sufficient time to bed in before judging their impact. Examples of good practice are emerging across the country where schools have welcomed the new duty as an opportunity to exercise choice and commission a careers service more tailored to the particular needs of their pupils.

42. We know there is more to do. We have commissioned an Ofsted thematic review of careers guidance to assess the impact of the new duty. This will highlight good practice and provide a benchmark for any future improvements to the quality of careers provision. We will await the findings of the thematic review, reporting this summer, before taking any further action. This will ensure we are in possession of as much evidence as possible to inform next steps.

(17) ***Informed face-to-face careers advice is essential for informing career choices and every young person should have the opportunity to access it. The Government should set out how it plans to ensure that all students have the opportunity to access face-to-face careers advice, with the National Careers Service as one possible resource.***

43. The Government agrees that face-to-face careers guidance can play an important role in ensuring that pupils have the right support when choosing subjects, courses and places of study. This is particularly true of young people who are disadvantaged, come from a background of inter-generational unemployment, or have special needs or disabilities. The statutory guidance sets a clear expectation that schools should secure face-to-face careers guidance where it is the most suitable approach to support young people to make successful transitions.

44. Young people and adults are able to access online resources and helpline services through the National Careers Service. The organisations engaged in delivering the National Careers Service are able to offer services on the open market, including to schools. The re-procurement of the National Careers Service from April 2014 offers an opportunity to strengthen the role of the Service in bringing in businesses, schools and colleges together and promoting local opportunities.

45. We do not believe that guaranteeing a minimum level of face-to-face careers guidance will necessarily drive up standards of provision. Young people are influenced by a range of people including family, friends and their peers when making decisions about the future. The effectiveness of careers guidance should ultimately be judged on attainment and progression outcomes for young people rather than the number of interactions an individual has with a careers adviser.

(18) We were pleased that employers placed a strong emphasis on the role of industry in engaging young people. Campaigns such as the "Big Bang Fair" and "See Inside Manufacturing" can be effective at promoting engineering careers, and should be encouraged and supported by Government. However, the success of such initiatives depends on the willingness of parents, schools and teachers to promote them to young people. In addition, such initiatives are naturally resource-intensive and run infrequently, so everyday engagement at school-level remains important.

46. We agree with the Committee's conclusion and we welcome initiatives by employers to engage young people in careers in all STEM subjects. As the Report mentions, the 'See Inside Manufacturing' initiative was effective in improving the perception of career opportunities in various industries with teachers and careers advisers. The Government is keen to build on the success of this with other industries.

47. We support various programmes which have a day-to-day impact on young people's perceptions of engineering and bring them into contact with positive role models. The STEM Ambassadors programme, funded by BiS, has a network of over 25,000 STEM professionals and academics who work with schools to support STEM education and promote STEM careers. We also part-fund the STEM Clubs programme, which aims to have a STEM Club operating in 80% of secondary schools by July 2015. The activities which many of these Clubs undertake involve local industry and involve young people in practical engineering tasks.

(19) We support the principle of engaging school teachers with the engineering industry on an on-going basis, including spending time in industry. ***Government must ensure that schools have sufficient resources to ensure Continuing Professional Development is a norm not a luxury. Employers also have a key role in providing careers advice to students. Engagement with local engineering industry should be particularly encouraged amongst teachers of STEM subjects. We recognise that teachers already face many conflicting pressures. Therefore we recommend that engagement with industry be a core requirement of teachers' Continuing Professional Development (CPD).***

48. We agree that professional development for teachers is important; it helps teachers to continue to reflect on and develop their teaching practice, deepen their subject knowledge and ultimately improve the outcomes of their pupils. The Government believes that schools, heads and teachers are best placed to make decisions about professional development that reflect the needs of their teachers and the school as they are in the best position to make judgements about relative spending priorities and specific development requirements. People come into teaching from a range of backgrounds, and whilst clearly links with industry and working with employers can be very beneficial, individual schools will know best how to address their teachers' level of understanding.

49. We aim to support the development of a "self-improving" teaching profession which has the capacity to take responsibility for its own development and improvement, without prescription from central Government. We are therefore creating a national network of Teaching Schools (there are over 200 to date, with an ambition of 500 by 2014/15), which sit at the hub of local clusters as centres of excellence in teacher training and professional development, and we are considering ways in how we can encourage and support teachers to engage with high-quality research.

50. With regard to industry taking a lead in providing careers advice to pupils, this is already happening. The 'Inspiring the Future' initiative, run by the Education and Employers Taskforce, is connecting with speakers from a range of sectors and backgrounds with local schools. A new online service 'Plotr', formed by a partnership of businesses and supported by Government, will provide young people with inspirational information about a wide range of careers and connect them to opportunities (jobs, Apprenticeships, courses and volunteering). Plotr will be launched formally later this year.

51. We are also strengthening the links between local employers and the National Careers Service to ensure that there is an improved flow of local labour market intelligence available to all its users and partners. From July 2013, Local Enterprise Partnership (LEP) local skills priorities will be published on the National Careers Service website, supported by local labour market information brought together by the LEP.

(20) ***We recommend that learned societies, professional engineering institutions and trade bodies put an obligation on their members to systematically engage in promoting engineering and technology as a career through a structured programme of educational engagement.***

52. We agree that this is a useful recommendation and would be pleased to work with organisations to further promote careers in engineering.

Research and Evidence in DfE

(21) We are concerned that the Department for Education; (i) does not have a clear definition of what constitutes research spend; (ii) has not planned its research spend sufficiently in advance; (iii) has no established budget for evaluation of policies; and (iv) does not protect or ring-fence its research budget from "other priorities". The desire to remain flexible and "demand-driven" is not at odds with strategic, longterm thinking about research and evaluation.

(22) The DfE's Chief Scientific Adviser (CSA), who also holds the post of Director of Research and Analysis, gave oral evidence on 21 November 2012 and told us she had "not done the work yet" on future research spending, yet written evidence from the DfE following the evidence session stated that business planning would conclude in the New Year. This suggests to us either that strategic planning of research spending in the DfE is given very little time or that the CSA has limited involvement. ***We would be interested in an explanation from Government on this matter.***

53. Our Chief Scientific Adviser (CSA), Carole Willis, is responsible for a clearly ring-fenced research budget which is used for a range of research activities. This includes funding international comparative studies to explore the performance of England

compared to other countries; a number of longitudinal studies; our three Research Centres; and a range of studies aimed at understanding what is driving different outcomes in education and Children's Services and what kinds of activities might improve outcomes.

54. The overall size of the research budget is agreed annually as part of the business planning process which takes place between December and March, but the need for research—both long and short term—is continually reviewed throughout the year. Our CSA is actively involved in all these discussions—and it is on this basis that she advises Ministers on the appropriate size of the research budget, taking into account long term projects, shorter term needs, and potential demand that is likely to arise during the year. If underspends appear in the research budget during the year then the department will consider how those can best be used on other priorities, in line with good financial practice.

55. Evaluation activity for individual initiatives—to explore the impact of specific policy interventions—is funded directly from the appropriate individual programme budgets for those initiatives in order to avoid swamping the research budget with large and variable evaluation demands. This increases the overall amount spent on research and evaluation by the department and helps to protect investment in long term strategic projects.

56. Our research activity covers long term strategic projects as well as short term needs. For example, we have recently commissioned a second Longitudinal Study of Young People in England which will run for 8 years, to provide insight into recent influences on young people, including our educational reforms.

57. It is difficult to identify all research needs at the start of the year—hence the need for flexibility in revisiting priorities throughout the year. However, we agree with the Committee that the Department could more effectively identify the key evidence gaps in education and Children's Services to inform its research priorities and to work with other funders and researchers to help fill these gaps. We are actively exploring how to achieve this as part of work to strengthen our use of robust evidence and analysis and have established a new internal Research Board to help us focus on this issue.

(23) Our recommendation to the Department for Education (DfE), based on our experience during this inquiry, is that greater focus needs to be placed on evidence before future changes are made, and needs to leave sufficient time for evidence to be gathered on the effectiveness of its proposed changes before introducing further change. *We recommend that the DfE conducts a re-evaluation of its attitude towards the role of evidence in policy and decision-making.*

58. We welcome the Committee's aspirations for the role of evidence in the department. Last year we conducted reviews of our approach to policy making and our use of evidence and analysis. These reviews concluded that research, analysis and data need to be at the heart of everything we do if we are to provide Ministers with the best policy advice possible. We need to more closely integrate analysis and policy making, and have reorganised our analysts to help achieve this, embedding them more firmly within policy teams.

59. We are raising the skills and awareness of policy officials, so that they can seek out and use research evidence more effectively, including a series of learning and development

activities. Bringing evidence into an earlier phase of policy consideration and appraisal will help to shape policy design. We have introduced a new set of "policy tests" as a tool for officials at all levels to improve the quality of the policy making processes. Central to these tests is the role of evidence, analysis and the importance of engaging with world class experts. There are now clear expectations that everyone in the department has a responsibility to seek out and engage with the evidence in their policy area and continually question what more we need to know to provide Ministers with the best policy advice.

(24) We are pleased that the DfE has warmed to the concept of using Randomised Controlled Trials (RCTs) in education policy and that the Department is challenging itself on the use of RCTs. ***Policy should be backed up by evidence and although evidence can come from many sources, RCTs are particularly useful in social policy. The possibility of gathering evidence from RCTs should be seriously considered every time the DfE considers an education policy change.***

60. We agree with the Committee and have been working extensively on this issue, drawing on advice from Dr Ben Goldacre and the published Cabinet Office document '*Test, Learn and Adapt*'. Dr Goldacre has just published his vision for evidence based practice in the teaching profession available here: http://media.education.gov.uk/assets/files/pdf/b/ben%20goldacre%20paper.pdf . The points he makes are relevant for policy as well as practice and we are actively exploring where we can make more extensive use of quantitative analysis—and Randomised Control Trials in particular—to investigate policy questions. We convened a well-attended seminar last month for senior officials, chaired by the Permanent Secretary, at which Dr Goldacre championed both the need and opportunities for trials within education and children's services. We are pursuing more active engagement with experts in robust research methods.

61. Since the Department's establishment of the Education Endowment Foundation a growing number of practical learning interventions are being subjected to rigorous trials. Results from these studies will inform both policy and practice. The Department has also funded a number of trials in children's services and children's social care.

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